

**METHOD OF REAL TIME COLLISION DETECTION BETWEEN
GEOMETRIC MODELS**

ABSTRACT OF THE DISCLOSURE

5 A method of real time collision detection
between geometric models includes the steps of
identifying a current tracking point of a force
feedback device colliding with a mesh model of the
geometric model and identifying a current triangle
10 associated with the current tracking point, wherein the
force feedback device is operatively connected to a
computer system. The method also includes the steps of
determining a new tracking point of the force feedback
device colliding with the mesh model by approximating
15 the new tracking point from the current tracking point
and the current triangle, and determining a state of
the new tracking point and a known state using the new
tracking point and the state of the previous tracking
point, wherein the state is inside, on an edge or on a
20 vertex of either the current triangle or a new
triangle. The method further includes the steps of
using the state of the new tracking point to determine
if a predetermined condition is met to conclude that
the new tracking point is on the current triangle or if
25 another predetermined condition is met to conclude that
the new tracking point crossed to a new triangle,

wherein the new triangle is connectively associated with the current triangle.